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"SPORT SPORTS SHOE WITH IMPACT ABSORBER SYSTEM"

SUMMARY OF THE INVENTION

[0001] The present invention ~~refers~~ is directed to a sport sports shoe providing an impact absorber system, ~~these~~ for absorbing an impact ~~being generated by the~~ an athlete's feet. The absorption system comprises resilient or elastic tubular elements grouped in a ~~parallel mode~~, and arranged ~~side by side one another~~ over the sole region of the shoe, generally on the heel region, although it can be inserted in two or three sole regions, in this last option occupying almost all shoe sole.

[0002] ~~It should be pointed out that the absorption~~ The impact absorber system of ~~this~~ the present invention contributes to ~~correct~~ correcting an athlete's paces, preserving ~~their~~ the athlete's efficiency and security, ~~as well as entailing~~ and maintaining a longer duration ~~to the shoe itself~~ life.

[0003] ~~The resilient tubes (in this text we will use the word "resilient" although the referred to tube~~ The tubular elements can be manufactured with an elastic, resilient or compound material). The tubular elements are arranged in a ~~parallel mode~~ with one another and placed disposed transversally to the shoe ~~longitudinal axis~~ of the shoe, arranged adjacent or very close to one another.

[0004] ~~Basically these tubes~~ The tubular elements are cylinders of elliptical cross : section ~~although they~~ that can be manufactured in a cylinder shape of circular cross- section, or be manufactured in any other compound cross-section sectional shape.

[0005] The material ~~basically preferred to be used in~~ material for the manufacture of the sport sports shoe impact absorber resilient-system of the present invention is the plastics, ~~although other~~ plastic. Other materials can be used, provided that they are adequate ~~to the usage functions~~ meet the activity for which the shoe will be worn.

[0006] ~~Thus, also are specified in accordance with the destination the tube~~ The activity for which the shoe will be worn dictates that the tubular elements wall thickness ~~as well as the~~ and respective diameters, ~~and also the size of each~~

tubetubular element, its form, and the distance among thembetween the tubular elements.

[0007] Each set of three ~~tubest~~tubular elements is closed on laterally opposite ends by walls ~~on both opposed extremities of the set.~~, ~~The aim of these walls is to both static~~statically and dynamically stabilize each set, keeping them functionally firm duringwhile the shoe usage ~~avoiding, or at least soothe, the~~is being worn to prevent distortion~~-, namely, the shoe inclination due to wrong, inclined, of user step, misstep~~ during ~~sports~~sports activities.

[0008] The interior of each tube ~~contains basically air, but any other materials that result in special performances,~~tubular element can contain air or any other material that enhances performance for particular applications, ~~can be inserted into the interior of these tubes.~~

[0009]~~It becomes evident that all features of the~~ The sports shoe with impact absorber set~~system of this~~the present invention havehas a design proportional to the user's weight, ~~i.e., the athlete using this sport shoe. Besides, the shoe aims each different type of the athlete's activity~~ and the different types of activities engaged in by the user.

[0010] The invention will be better understood and appraised by way of the drawings, represented by figures ~~which are shortly described as follows, when compared with~~and the description text that is submitted further onwhich follows.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Figure 1 is a perspective view of the ~~sports~~sports shoe of the invention, showing the position of the impact absorber ~~tubular~~ set in relation to the ~~sports~~sports shoe.;

[0012] Figure 2 is a perspective view of the absorber ~~tubular~~ set, ~~showing also~~ and the shoe insole.;

[0013] Figure 3 is a front view of the absorber set ~~as limited~~bounded by two opposed lateral walls.;

[0014] Figures 4, 5 and 6 are ~~application versions for~~illustrate positions of the impact absorber ~~tubular~~ sets, respectively in the heel area, in the heel and front third area, and ~~set applied to~~throughout the ~~whole~~entire user foot plant.;

~~[0015] Figure 7 is a comparison of diagrams for~~illustrates the transition of the tubular~~absorber~~ set; in from being at rest, and the same set to being under user's foot pressure-;

~~[0016] Figures 8, 9 and 10 are schematic cross-section/~~side views of an~~the effect of~~ a user's foot as applied to tubes in a certain impacton the absorber set atunder three usage different conditions-;

~~[0017] Figure 11 is a schematic cross-section~~rear view of an~~a~~ user's foot before and after stepping on a impact~~the~~ absorber set, and this same figure illustrates what happens after the foot makes no more pressure on the tubular set-;

~~[0018] Figure 12 is a schematic cross-section~~rear view of a user's foot makingapplying pressure onto the absorber set, showing the deformations ~~which~~that result from ~~this~~the pressure.

DETAILED DESCRIPTION OF THE INVENTION

~~[0019]By figure 1 and the following figures one can apprise that~~ Figure 1 illustrates a preferred embodiment of the present invention in which the impact absorber system 4 of this invention, in a preferred embodiment, is embedded intwithin the sole 1 of a sport shoe, as sports shoe. The absorber set is disposed on the heel region, where the higher weight applied to the shoe by the user's foot concentrates exactly on the heel region, where the [absorber] set is placed's foot is concentrated.

~~[0020] In the case of a sports~~sports shoe, the insole 2 occupies the front two thirds of the shoe, and the shoe body covers all superior~~3~~ provides an upper part of the shoe.

~~[0021] Figure 2 of the drawings illustrates the shoe impact absorber set 4, showing tubes~~tubular elements 6, 7 and ~~88~~8, which form the impact absorber system, and the side walls 5, in each extremity of the set 4 on opposite side ends of the absorber set 4 and plurality of tubular elements. These~~The~~ side walls act as stabilizers~~5~~ stabilize the shoe against the resilient deformation of the tubes~~tubular elements~~ 6, 7 and 8, and still serve as a closinghousing for the absorber set 4.

~~[0022]The tubes~~ Each tubular element 6, 7, 8 can be manufactured in size, thickness and format different sizes, thicknesses and configurations from one another, and have as an option for the fabrication, the employment of~~be fabricated~~ from plastics, resin, flexible polymers, or any other materials, for example, compound

~~application for elastic and resilient materials that will be invented and show themselves as adequate to~~that can perform the functions they exert in the shoe, as, e.g., compound application for elastic and resilient materials.

~~[0023] It is showed a tubular set of three tubes, but it is clear that each~~ Although the figures illustrate an absorber set 4 having three tubular elements, the absorber set can be manufactured with a different number of tubestubular elements.

~~[0024] Basically, and within the inventive concept~~ In one embodiment of the present invention, ~~tubethe tubular element~~ 6 receives the initial impactload of the athleteuser's foot, performing theand performs a transition fertothe central tubetubular element 7, which carry outreceives the main impact absorption, since the load received in this [tubetubular element] is of highest intensity. ~~Tube 8 responds forTubular element 8 provides~~ the final absorption, when the athleteuser's foot does not exert any moreno longer exerts pressure on the sportssports shoe.

~~[0025] Figure 3 emphasizes the position~~illustrates a front view of the side walls 5, which closeenclose the tubularabsorber set 4, providing balance and stability to the same, and transferring this stability to the athleteuser.

~~[0026] Figure 4 shows~~ Figure 4 illustrates a first embodiment of the present invention in which the absorber set 4 is disposed at position A, at the heel, of the absorber 4 within relation to the athlete's foot.user's foot. The absorber set 4 thus absorbs the impact of the user's step at the beginning of the user's step.

~~[0027] Figure 5 illustrates~~ a second embodiment of the present invention in which a pair of absorber sets 4 is disposed at the positions B and C for the absorber sets 4 on, the heel and front third of the athlete'user's foot sole. The absorber set 4, thus absorbs the impact of the user's step at the beginning and end of the user's step.

~~[0028] Figure 6 shows the application of three absorbers 4 on the~~illustrates a third embodiment of the present invention in which three absorber sets 4 are disposed at positions D, E and F of athlete'the user's foot, covering practically all athlete'user's foot sole, andthus receiving, thus, the full impact from the beginning to the end of the athlete'user's foot pressure through the entire user's step.

~~[0029] Figure 7 comprises two schemes: one set of 3 tubes without pressure, containing material H in the interior of each tube, and an~~illustrates the transition of

the absorber set 4 from the tubular elements without pressure to being under pressure. When the absorber set 4 is not under pressure, the material inside each tubular element is in an uncompressed state H. When the absorber set of 3 tubes 4 is under pressure showing not only the tubes 6, 7 and 8, deformed by the compression, but also, the material in each tubular element is in a compressed by the athlete's foot pressure. It is necessary to emphasize that the state J. The substance of the internal material of the tubes of the sets 4 may vary in accordance with each specific tubular elements of the absorber sets 4 of the present invention can be different and tailored to the specific type of activity or application for which the sports shoe of this invention will be used.

[0030] Figures 8, 9 and 10 illustrate three conditions of dynamic impact of the athlete's foot over the tubular elements 6, 7 and 8 by generating which generate different pressures and deformations on these tubes. the tubular elements. In particular, Figure 8 shows the athlete's foot [in at the moment of] touching the absorber set 4; figure Figure 9 shows athlete's the user's foot compressing the absorber set 4 completely, and figure Figure 10 shows athlete's the user's foot decreasing pressure on the impact-absorber set 4.

[0031] Figures Figure 11 and 12 illustrate illustrates schematically, respectively, the absorber set 4 without pressure on being applied by the athlete's user's foot -with the sheet K before the impact and after the impact-, and under athlete's. Figure 12 illustrates the absorber set 4 under the user's foot pressure, with the sheet K being showed before and during the deformation, owing to the impact.

[0032] It should be advised that small alterations included in this invention become incorporated to the protection established by the enclosed claims. Example embodiments of the present invention have now been described in accordance with the above advantages. It will be appreciated that these examples are merely illustrative of the invention. Many variations and modifications will be apparent to those skilled in the art.